

We claim:

1. A pattern inspection method for: capturing images, by scanning an object to be inspected on which a plurality of identical patterns are arranged, of the
5 plurality of the patterns; detecting the positional information of the images of neighboring identical patterns; determining the quantity of correction, by which the positional relation of the images of the neighboring identical patterns is corrected, based on the
10 detected positional information; and comparing the images the positional relation of which has been corrected based on the quantity of correction, wherein the quantity of correction is determined based on the information containing the positions of the images at multiple
15 separate places in the pattern.

2. A pattern inspection method, as set forth in claim 1, wherein the multiple separate places include the vicinities of both ends in the pattern arrangement to be inspected.

20 3. A pattern inspection method, as set forth in claim 1, wherein the detection of the positional information of the images, the determination of the quantity of correction and the comparison of the images are carried out in parallel with the scan for capturing
25 the images to be used for the subsequent comparison, and wherein the determination of the quantity of correction and the comparison of the images are started after the capture of the images of the two neighboring patterns is completed.

30 4. A pattern inspection method for: capturing images, by scanning an object to be inspected on which a plurality of identical patterns are arranged, of the plurality of the patterns; detecting the positional information of the images of the identical patterns in
35 each row; determining the quantity of correction, by which the positional relation of the images of the neighboring patterns is corrected, based on the detected

positional information; and comparing the images the
positional relation of which has been corrected based on
the quantity of the correction, wherein the quantity of
correction is determined based on the information
5 containing the positions of the images of the multiple
separate patterns in each row in the pattern arrangement.

5. A pattern inspection method, as set forth in
claim 4, wherein the multiple separate patterns include
the patterns in the vicinities of both ends in each row.

10 6. A pattern inspection method, as set forth in
claim 1, wherein the detection of position, the
determination of the quantity of correction and the
comparison of the images are carried out in parallel with
the scan for capturing the images to be used for the
15 subsequent comparison, and wherein the determination of
the quantity of correction and the comparison of the
images are started after the capture of the images of the
patterns in each row is completed.

20 7. A pattern inspection method, as set forth in
claim 1, wherein each pattern has a cell pattern repeated
at a predetermined pitch, and wherein the cell comparison
for comparing the neighboring cell patterns in each
pattern is made immediately after the capture of the
images of the neighboring cell patterns and in parallel
25 to the capture of the images to be used for the
subsequent cell comparison.

30 8. A pattern inspection apparatus comprising: an
image capturing section for capturing images, by scanning
an object to be inspected on which a plurality of
identical patterns are arranged, of the plurality of the
patterns; an image storage section for storing captured
images; a positional information detecting section for
detecting the positional information of the images of
neighboring identical patterns; a correction quantity
35 determining section for determining the quantity of
correction, by which the positional relation of the
images of the neighboring identical patterns is

corrected, based on the detected positional information;
and a pattern comparison section for correcting the
positional relation based on the quantity of correction
and comparing the corrected images, wherein the
5 correction quantity determining section determines the
quantity of correction based on the information
containing the positions of the images at multiple
separate places in the pattern.

9. A pattern inspection apparatus, as set forth in
10 claim 8, wherein the multiple separate places include the
vicinities of both ends in the scanning direction of the
pattern.

10. A pattern inspection apparatus, as set forth in
claim 8, wherein the detection of the positional
15 information of the image by the positional information
detecting section, the determination of the quantity of
correction by the correction quantity determining section
and the comparison of the images by the pattern
comparison section are carried out in parallel to the
20 capture of the images to be used for the subsequent
comparison by the image capturing section and the storage
of the images, and wherein the image storage section has
a capacity for storing images of at least two patterns,
and after the capture of two neighboring images by the
25 image capturing section and the storage of the images are
completed, the correction quantity determining section
and the pattern comparison section start the
determination of the quantity of correction and the
comparison of the images.

30 11. A pattern inspection apparatus comprising: an
image capturing section for capturing images, by scanning
an object to be inspected on which a plurality of
identical patterns are arranged, of the plurality of the
patterns; an image storage section for storing captured
35 images; a positional information detecting section for
detecting the positional information of the images of the
identical patterns in each row; a correction quantity

determining section for determining the quantity of correction, by which the positional relation of the images of the neighboring patterns is corrected, based on the detected positional information; and a pattern comparison section for correcting the positional relation based on the quantity of correction and comparing the corrected images, wherein the correction quantity determining section determines the quantity of correction based on the information containing the positions of the images at multiple separate places in each row in the scanning direction in the pattern arrangement.

12. A pattern inspection apparatus, as set forth in claim 11, wherein the multiple separate patterns include the patterns in the vicinity of both ends in each row.

13. A pattern inspection apparatus, as set forth in claim 11, wherein the detection of the positional information of the image by the positional information detecting section, the determination of the quantity of correction and the comparison of the images by the pattern comparison section are carried out in parallel to the capture of the images to be used for the subsequent comparison by the image capturing section and the storage of the images, and wherein the image storage section has a capacity for storing pattern images of at least one row, and after the capture of the pattern images of each row by the image capturing section and the storage of the images are completed, the correction quantity determining section and the pattern comparison section start the determination of the quantity of correction and the comparison of the images

14. A pattern inspection apparatus, as set forth in claim 8, wherein each pattern has a cell pattern to be repeated at a predetermined pitch, wherein a cell comparison section for making a comparison between the neighboring cell patterns in each pattern is included, and wherein the cell comparison section makes a comparison between the neighboring cell patterns in

parallel to the capture of the images to be used for the subsequent comparison after the capture of the cell pattern images, which are the object for the immediately subsequent comparison, by the image storage section.

5 15. A pattern inspection apparatus comprising: an image capturing section for capturing images, by scanning an object to be inspected on which a plurality of patterns having a cell pattern to be repeated at a predetermined pitch are arranged, of the plurality of
10 patterns; and m (m is an integer larger than 1) processing units having an identical configuration, wherein each processing unit comprises an image storage section for storing captured images, a positional information detecting section for detecting the
15 positional information of the images of the identical patterns in each row, a correction quantity determining section for determining the quantity of correction, by which the positional relation of the images of the neighboring identical patterns is corrected, based on the
20 detected positional information, a pattern comparison section for correcting the positional relation based on the quantity of correction and comparing the corrected images, and a cell comparison section for making a comparison between the neighboring cell patterns in each
25 pattern, and wherein each of the m processing units carries out, for each row and in a sharing manner, any of the capture and storage of the images, the cell comparison and the detection of positional deviation, and the determination of the quantity of correction and the
30 pattern comparison, and take turns for each capture and storage of the images.

 16. A pattern inspection apparatus, as set forth in claim 15, wherein the correction quantity determining
35 section determines the quantity of correction based on the information containing the positions of images of multiple separate patterns in each row in the scanning direction in the pattern arrangement.

17. A pattern inspection apparatus, as set forth in claim 16, wherein the multiple separate patterns include the patterns on both ends in each die.